REMARKS

Claims 1-30 will be pending in this application after entry of this amendment. Applicants thank the Examiner for his indication that claims 10-20, 22, 24, 25 and 30 are allowed as written and that claim 3 contains allowable subject matter. Applicants also thank the Examiner for his indication that claims 21 and 23 are not rejected in view of the prior art.

Claims 1, 21 and 23 have been amended. No new matter has been added. Claim 1 has been amended to correct a typographical error. The other claims amendments are discussed below. No new matter has been added.

The foregoing amendments are taken in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

By amending the application, the Applicants do not concede that the patent coverage available to them would not extend as far as the original claim. Rather, Applicants reserve the right to file a continuation application to pursue the breadth of the claims as filed. Applicants believe that the Examiner has not made a sufficient showing of inherency of the teachings of the asserted prior art, especially given the lack of teachings in the cited references of the properties that Applicants have recited in their claims.

Further, by the present amendment, it does not follow that the amended claims have become so perfect in their description that no one could devise an equivalent. After amendment, as before, limitations in the ability to describe the present invention in language in the patent claims naturally prevent the Applicants from capturing every nuance of the invention or describing with complete precision the range of its novelty or every possible equivalent. See, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 62 USPQ2d 1705 (2002). Accordingly, the foregoing amendments are made specifically in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicants would otherwise be entitled.

Entry of this amendment is proper under 37 C.F.R. §1.116 because this amendment: (a) places the application in condition for allowance (for the reasons discussed herein); (b) does not raise any new issue requiring further search and/or consideration because the amendment amplifies issues previously discussed throughout prosecution; (c) does not add claims without deleting an appropriate number of claims and (d) places the application in better form for appeal, should appeal be necessary. This amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of this amendment is thus respectfully requested.

Formal Matters

The Examiner objected to the claims on a variety of points. Applicants respectfully decline to adopt the Examiner's suggestions at this time, but would be willing to discuss further the issues raised by the Examiner.

With respect the Examiner's Reasons for Allowance, Applicants respectfully request clarification with respect to the reasons for allowance for claim 10. The Examiner's attention is drawn to paragraph 11 of the present office action. It is unclear the reason for allowance for claim 10 because the paragraph discusses limitations that are not found in claim 10, i.e., 16 materials. In particular, Applicants request that the Examiner specifically point to which of the features of claim 10 makes the claim novel and non-obvious over the prior art. In addition, Applicants request clarification of the reasons for allowance of the other claims as well.

Rejection of claims 1, 2, 4-9 and 26-29 under 35 U.S.C. §103

The Examiner rejected claims 1, 2, 4-9 and 26-29 under 35 U.S.C. §103 as obvious over publication WO98/15501 to McFarland et al. ("McFarland") or publication WO99/18431 to Matsiev et al. ("Matsiev") in view of U.S. Patent No. 6,393,898 to Hajduk et al. ("Hajduk") or U.S. Patent No. 6,149,882 to Guan et al. ("Guan"). This rejection is traversed.

The four references do not show each feature of the presently claimed invention. As discussed in the previous response, Hajduk and Guan rely on the transport of fluid to measure the physical property they are interested in. This fluid transport is different from the present invention, where the viscosity of the fluid is measured while the materials remain on the substrate and without the need to remove the materials from the substrate.

Hajduk states:

> The needle can be inserted into one of the sample wells (e.g. in a 96 well plate) and liquid aspirated into the barrel or tube by reducing the pressure in the barrel or tube. This may be done either by retracting the plunger on a separate syringe pump, such as provided to aspirate and dispense liquids in an automated liquid handling system, or by shunting the line to a vacuum source. Once a sufficient quantity of liquid is aspirated into the barrel, the syringe is lifted above the sample's liquid level, and the liquid is allowed or forced to flow through the needle and back into the sample well from which it was drawn. The flow may be monitored by any of a variety of mechanisms described herein. See column 4, lines 50-62. (emphasis added).

Guan states:

> Typically, solid library members are supplied to each of the vessels 12 in the form of a fixed bed: the library members are either supported on solid particles or are themselves granular or porous solids. In such cases, the test fluid flows through the interstices in the fixed bed, ensuring intimate contact between the test fluid and the library member. Similarly, liquid library members are confined within the

> vessels 12 by capillary forces, and fluid contact occurs by bubbling test gas through the vessels 12. Following fluid/solid or fluid/liquid contacting, the test fluid exits each of the vessels 12 through outlet conduits 20 that convey the test fluid to the exit control volume 16. Most vessel effluent dumps directly into the exit control volume 16. However, test fluid [from] selected vessels 12 is routed from the outlet conduits 20 through a sample bypass 24 to a detector 26, which measures changes in the test fluid resulting from contact with a library member. See column 5, lines 12-28. (emphasis added).

As can be seen from the selected portions of Hajduk and Guan, respectively, fluid transport away from the sample well/substrate is an important part of the means they use to measure their physical property of choice. Consequently, Hajduk and Guan do not teach or suggest this feature of the present invention.

The Examiner's statement about the disclosure of Hajduk is accurate, but it does not support the Examiner's position. In particular, the Examiner stated:

> Also, the Examiner points out that in the Hajduk et al. viscometer device operation, that over the full time period of the fluid flow testing in and out of the sample contacting capillary, that the just aspirated fluid sample does flow back thru the needle back into the sample well which the fluid sample was drawn from; i.e.- thus leaving all the fluid material in the well or on the substrate [such behavior and end effect to be contrasted/compared with the claim 1 instant invention where the fluid sample is partial {sic} lifted up into the fluid contacting capillary tip during the force application, that leaves a minute fraction of the fluid sample confined within the capillary tip instead of being returned into the fluid sample well]. Final office action, page 6.

First, the issue of whether sample remains in the capillary after the measurement is inapposite to the present discussion. Applicants do not dispute that some of the sample may remain in the capillary after the measurement has been completed. In this respect, both Hajduk and the present invention are similar; both require cleaning of the capillary before a subsequent use. However, the time period after the measurement is completed is not pertinent to this particular claim because there is no language in the claim related to what happens to the sample after measurement. Rather, the claim is directed to what happens to the sample during the measurement. From the clear language of the claim, the monitoring step takes place "while said materials remain on said substrate and without the need to remove said materials from said substrate". Thus, sample remaining in the capillary after measurement is inapposite.

Second, the Examiner accurately characterizes the disclosure of Hajduk and acknowledges that during measurement the sample is drawn into the capillary, the capillary is withdrawn from the sample well/substrate, and the sample is allowed to flow back into the sample well. However, this is different from the present invention where, during measurement, the materials remain on the substrate and without the

need to remove the materials from the substrate. In essence, Hajduk discloses a device that needs to remove the materials from the substrate during measurement, in clear contrast to the present invention.

As can be seen, Hajduk does not disclose all that the Examiner asserts that it does, leaving gaps in the prior art that are not otherwise filled by the cited references and Guan, in particular.

The Examiner acknowledged that McFarland and Matsiev do not disclose the use of capillaries and thus these references are less pertinent to the present invention. As is repeated throughout the disclosures of McFarland and Matsiev, they use ultrasonic type and mechanical resonator type sensors (thickness shear mode sensors and tuning forks) to measure viscosity. In ultrasonic sensors, acoustic waves are propagated through a sample. The resultant waves and reflections are detected. Based on the difference between the initial and the resultant waves, a determination about a property, e.g. viscosity, of the sample can be made. In mechanical resonators, a resonator is placed within the sample and an input signal is sent to cause the resonator to oscillate. The specific oscillations of the resonator will depend on the particular property being observed. Comparing the initial and resultant oscillations will provide useful information about the sample. Consequently, McFarland and Matsiev do not teach or suggest that during measurement utilizing a capillary, the materials remain on the substrate and without the need to remove the materials from the substrate.

The inescapable conclusion from the four references is that they present very different solutions to a problem and are not combinable with each other. One skilled in the art would clearly understand that any attempt to combine the technologies would create a device that was not the present invention. For example, combining the mechanical resonators of McFarland/Matsiev with the capillaries of Hajduk would create a resonator that is dipped into the sample well and removed and the sample is allowed to drip back into the sample well. The measurement of this combination device would have to take place when the resonator is removed form the sample well. The combination device is not the present invention which uses a capillary and the sample remains of the sample plate. Besides, the combination device has questionable operability.

The combination of McFarland/Matsiev with Guan is likewise not the present invention. Guan transports a test fluid from the reaction vessel (substrate) to a detector, where the test fluid has a property measured. In the combination device, the detector would be a resonator. Clearly, the test fluid is not in the reaction vessel, i.e., the sample well, when it properties are detected. The combination device is not the present invention which uses a capillary and the sample remains of the sample plate.

Furthermore, there is still no motivation to combine the references.

First, as acknowledged by the Examiner, McFarland and Matsiev do not teach or suggest the use of capillaries. This alone indicates that McFarland and Matsiev are not the source of the asserted motivation to combine the four references.

Second, the disparate methodologies used to accomplish their tasks indicate that the four references do not provide one skilled in the art with the motivation to combine the references. McFarland and Matsiev use acoustic waves/mechanical oscillations while Hajduk and Guan use fluid flow, with no suggestion that the other type of methodologies would be suitable for use in their device. For example, Hajduk does not suggest that the acoustic wave methodology of McFarland would be suitable for use in his device.

Third, although Hajduk and Guan disclose the use of needles and capillaries, these disclosures are not a source of motivation to combine the four references.

Specifically, as seen in the claims and as discussed above, the samples in the present invention remain in contact with the substrate and the capillary on which they are placed to have their viscosity measured.

Hajduk and Guan both teach away from this concept by clearly describing the removal of the sample from the substrate in order to conduct property measurement. That is, both remove the sample from the substrate during measurement. In Hajduk, the flow of the liquid sample back into the sample well is where the monitoring is conducted and how the property, e.g. viscosity, is measured. The sample removal and flow back into the sample well is critical to the operation of the Hajduk device. Thus, Hajduk teaches away from leaving the sample on the substrate while conducting the viscosity measurement.

Similar to Hajduk, the Guan device utilizes a detector that requires the sample to be diverted from the substrate. From the above quote, the sample is routed from the vessel (sample well) to the detector. Without the flow of the sample to the detector, no changes in the sample can be measured. Thus, Guan teaches away from leaving the sample on the substrate while conducting the viscosity measurement.

Motivation to combine is also absent from the skill in the art. One skilled in the art would understand that the methodologies of McFarland and Matsiev, on the one hand, would be incompatible with the methodologies of Hajduk and Guan, on the other hand.

In sum, motivation to combine cannot be found within the references because each use divergent methodologies to accomplish their tasks and because Hajduk and Guan teach away from leaving samples on the substrate. Motivation to combine the references is also not found in the skill in the art.

For at least these reasons, the present claims are not obvious over McFarland or Matsiev in view of Hajduk or Guan.

CONCLUSIONS

In view of Applicants' amendments and remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, Applicants submit that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience. Should the Examiner have any question or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (248) 593-9900.

If for some reason Applicant has not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge our Deposit Account No. 50-1097 for any fee which may be due.

Respectfully submitted,

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